In the foregoing short analysis of the contents of Dr. Ryan's volume, we have merely wished to apprise our readers of its contents, and the plan on which it is arranged; neither time or space have permitted us to enter on a review of the author's opinions, nor to dilate on the various questions of which he treats. An American edition of it, with such additions and alterations as may be required to adapt it to the jurisprudence of this country, would, we think, be a valuable addition to our medical and legal libraries: not as a substitute for the more extended work of Dr. Beck, but as a *catalogue raisonnée* of the various questions in which jurisprudence calls on her sister science for elucidation.

R. E. G.

XVI. *Medico-Chirurgical Transactions.* Vol. XVI. Part II. London, 1831. pp. 236, 8vo.

The portion of the sixteenth volume of the Transactions of the London Medico-Chirurgical Society, now under notice, comprises eight articles, all of which are more or less interesting. The first is an elaborate essay on omental hernia, by John Macfarlane, M. D. of Glasgow. The omentum enters into the formation of nearly all the varieties of hernia, but from its position it is less frequently met with in those which pass out through the inferior apertures of the abdomen or pelvis. It is more frequently encountered in umbilical than in inguinal, and in inguinal than in crural hernia. As it descends lower in the left than in the right side of the abdomen, it escapes more readily through the left inguinal opening than through the right; Dr. Macfarlane thinks that three-fourths of the cases of epiplocele are in the left groin. In some rare cases the omentum has escaped on both sides in the same patient, and in the same side it has been found to protrude through both inguinal and crural openings.

This disease occurs more frequently in advanced than in early life; the omentum in the latter period being small; Dr. M. has, however, seen three cases of congenital rupture in very young children, in one of which the tumour appeared to consist wholly, and in the other two, partly of omentum.

Epiplocele is less dangerous, and is usually attended with less urgent and alarming symptoms than intestinal rupture; nevertheless, in strangulated omental hernia the symptoms are often extremely severe, and Dr. M. is of opinion that it requires a more active and prompt treatment than seems to be followed by the chief surgical authorities of the present day.

The omental seldom attains the magnitude of an intestinal rupture; the enlargement of the tumour in the latter depending upon the repeated escape of new portions of bowel, while in the former it is more frequently to be attributed to the morbid enlargement of the displaced part. When the tumour is composed wholly of omentum, it usually presents an uneven surface, has a soft, doughy feel, and wants the tension and elasticity of enteroecle.

"When the tumour is small, recent, and unchanged in structure, it is often ill defined; and when in this state, it occupies the situation of the inguinal opening, it is apt to be mistaken for a partial enlargement of the spermatic cord; and even in an old irreducible epiplocele, the tumour sometimes presents externally a smooth and polished surface, with the tension, and other characters of an intestinal rupture. This is especially observable when the sac is distended with fluid; but even when this complication exists, we shall seldom fail, unless

the tension be very great, in recognising the hard and irregular omentum through the interposed fluid. The same uniformly smooth surface is occasionally met with, when the omentum contained in the sac is not consolidated, or otherwise morbidly changed, but is simply enlarged, from hypertrophy or obesity. Here, however, the absence of tension and elasticity, and the peculiar flabby state of the tumour, will render the diagnosis comparatively easy.

"The omentum, particularly when loaded with fat, escapes from the abdomen more readily than the intestines, is reduced with greater difficulty, and requires a stronger spring truss to prevent its reprotrusion."

In the employment of taxis for the reduction of epiplocele, Dr. M. recommends the avoidance of all violence or force, the omentum, when too much handled, being liable to be contused and lacerated. Dr. M. states that he has seen one case in which, from continued and powerful efforts at reduction, the omentum was lacerated in several places; and in another, the protruded part was livid and ecchymosed from the extravasation of blood into its cellular texture. The contused omentum, instead of being excised, was, unfortunately, returned into the abdomen, became gangrenous, and produced death.

"On the sudden protrusion of a portion of omentum, especially when it occurs for the first time, we may expect to find the accompanying symptoms extremely urgent. Strangulation may be immediately produced, violent pain in the tumour and abdomen excited, with vomiting, hiccup, and obstinate constipation. In some cases an operation is indispensable, whilst in others the distressing symptoms gradually yield, so soon as free alvine evacuations are procured."

The reduction of an epiplocele may be prevented, according to Dr. M. 1st, by adhesion of the omentum to the inner surface of the body, or neck of the sac. 2d. By enlargement of the omentum from engorgement of its vessels; the return of the blood through the veins being sometimes impeded by pressure at the hernial aperture. 3d. By the part of the omentum which passes through the neck of the sac being compressed into a hard, smooth cord, while the portion in the sac itself remains loose and capable of being expanded. This Pott considered as the most frequent impediment to the reduction of an epiplocele. 4th. From its having undergone a morbid enlargement. Dr. M. has dissected a patient with a large epiplocele of the right side, which had been irreducible for fourteen years; the omentum was so enlarged and disorganized, that reduction could not be accomplished until the inguinal canal was divided for nearly three inches. 5th. An epiplocele may be also irreducible from adipose enlargement of the omentum, without any *morbid* alteration of the affected part, and this enlargement may be accompanied with, or independent of general obesity. General evacuation causes a considerable absorption of the fatty matter of the omentum, so as to greatly reduce the size of the tumour, and occasionally to permit its return into the abdomen.

"In irreducible herniæ of large size, whether intestinal or omental, the patient is not unfrequently subject to smart attacks of colic, with pains in the tumour, after taking a hearty meal. When the rupture consists wholly of omentum, the pain commences almost immediately after eating, but when of intestine the uneasy feelings are longer in appearing, and seem to take place only when the contents of the intestinal canal are passing through the tumour. Besides these symptoms, an irreducible epiplocele is often accompanied by severe dragging or twitching at the stomach, and by repeated vomitings; in conse-

quence of the stomach being compelled to follow the motions, communicated to the *fixed* omentum, by the intestines and abdominal muscles. These symptoms are also most urgent after meals, because, from the distention of the bowels, the stomach is pushed up towards the diaphragm, and the omentum put more completely on the stretch, and also rendered more convex externally by the pressure of the intestines."

As the stomach and colon become accustomed to the restraint arising from this unnatural fixture of the omentum, we occasionally find that the urgent symptoms gradually diminish, or even altogether disappear; a result, however, of less frequent occurrence, according to Dr. M. than we should be led to expect from the assertions of writers.

"When the distention of the abdomen is moderate, an irreducible epiplocele may cease to produce any disagreeable symptoms; but when the stomach is full, the bowels constipated, and unusually distended with flatus, or fæces, when much straining of the abdominal muscles occurs, we cannot fail to meet with very distressing symptoms. It is the liability of the abdomen and its contents to great and often to sudden variations in size, even in healthy individuals, that enables us to explain the repeated recurrence of these painful paroxysms. They are generally more urgent when the omentum is suddenly, than when it is slowly, put on stretch; yet even in the latter state, they are sometimes marked and severe."

When an inguinal epiplocele has been long irreducible, the omentum sometimes becomes so altered in structure as to produce, by pressure and irritation of the spermatic cord, a diseased state of the testicle, with or without effusion into the tunica vaginalis.

"When an irreducible hernia is complicated with hydrocele," says Dr. M. "it would appear that the usual expedients for the cure of the latter disease cannot always be safely employed. The similarity of structure and contiguity of the affected parts is such, that when inflammation is excited by injection or otherwise for the purpose of producing a cohesion of the tunica vaginalis, it is liable to be propagated to the omentum or its sac, and give rise to alarming symptoms. It is also necessary to consider, before any operation is proposed, that as a preternatural collection of fluid sometimes takes place in the hernial sac itself, which may present all the characters of hydrocele, great caution is requisite in the diagnosis.

"When the omentum is fixed to the sac by extensive adhesions, or when it is neither inflamed nor irritated, it is seldom that any great accumulation of fluid takes place. Sometimes, however, the sac is so much distended, as to prove an additional source of uneasiness to the patient. Pott was repeatedly obliged to puncture the sac and evacuate the fluid, in order to remove the inconvenience arising from the enlargement and weight of the scrotum; and when this was neglected, gangrene was sometimes produced.

"To distinguish, therefore, between hydrocele complicated with an irreducible epiplocele, and a collection of fluid in the hernial sac, is of some practical importance. In the former, the fluid gradually accumulates in the most depending part of the scrotum, and extends upwards, leaving, as in the above case, a separation more or less marked between the two tumours. But, when the accumulation takes place in the sac, the swelling commences below the inguinal ring, and proceeds downwards, unless the hernia is scrotal, when it will begin in the same situation with hydrocele. We may expect, however, to find, when the fluid is confined to the sac, that the tense swelling is greater and higher up in the groin, and that the irreducible omentum is more completely surrounded by it than in the other form of disease."

It is the opinion of some writers, that when the local symptoms of a strangulated epiplocele are severe, and when they seem to depend rather upon inflammation than on strangulation, an operation is generally useless and frequently dangerous. Dr. M. on the contrary, asserts that an operation, even in these circumstances, may be not only necessary, but even highly successful, and he relates a case, which confirms his opinion. The operation will certainly be more successful when the omentum has protruded suddenly and become strangulated by the immediate pressure of the opening through which it has passed; but even when the disease is of long standing and irreducible, the additional size it requires when inflamed or engorged, says Dr. M. may cause over-distension of the hernial aperture, and produce such painful and injurious constriction that an operation may become necessary. In this state the symptoms are less rapid in their progress, but as soon as the tumefaction of the omentum has advanced to its greatest extent, the pressure at the ring may be as considerable, and the stricture nearly as complete as when directly produced by the escape of a larger piece of omentum than the opening can contain.

Dr. M. recommends, in opposition to Hey, Scarpa, Boyer, Richerand, and other writers, that in epiplocele, the adhesions which the neck of the omental rupture may have contracted with the neighbouring parts should be separated and the omentum returned into the abdomen whenever it is practicable.

"By permitting," says Dr. M. "the divided omentum to remain fixed to the neck of the sac, a temporary closure of the aperture will be effected, and the immediate descent of any portion of intestine or omentum for a time prevented. But, on the other hand, besides the danger of the intestines adhering to, or becoming entangled with, this fixed band of omentum, there is the risk of a second hernia forming at the same aperture. When the abdominal muscles are called into powerful action, the fixed omentum serves as an inclined plane along which the intestines glide, and by which the impetus will be more effectually directed to the old hernial aperture, than to any other part of the abdominal parietes; and, of course, the risk of a secondary tumour forming, be greatly increased."*

The permanent adhesion of the omentum to the inferior hernial openings of the abdomen, sometimes also seriously impairs the functions of the stomach and colon, the organs are dragged from their natural position, and instead of these organs gradually becoming accustomed to this restraint, it frequently happens that the symptoms adduced by it daily become more distressing, and continue to harass the patient with increasing severity during the remainder of life. Several cases in confirmation of this are quoted.

Besides, the disorganization to which the irreducible omentum is liable, is not confined to the tumour, but extends into the abdomen. Dr. M. says that he has seen one case and a preparation of the diseased parts of another, in which the omentum within the abdomen, as well as the portions contained in the irreducible ruptures, had lost every vestige of its natural structure, become exceedingly bulky, indurated, and tuberose, and produced death by exciting ascites.

Dr. M. has found the use of cold, to an omental rupture, by means of ice, snow, or evaporating lotions, more successful in promoting reduction, than other external applications.

* In omental hernia, which have existed for years, a portion of gut not unfrequently escapes into the same sac, and becomes strangulated.

Sir Astley Cooper once succeeded in reducing an omental inguinal hernia, by applying ice for four days. In robust and healthy subjects, Dr. M. says that cold applications may be continued for days with impunity; but when the patient is old and debilitated, their continuance for a few hours may be sufficient to destroy the vitality of the parts. The effects of cold must therefore be carefully watched by the surgeon.

Before returning the cut omentum into the abdomen, Dr. M. recommends that the bleeding vessels be individually secured, with fine ligatures. Sharp and Pott often returned the divided omentum without applying a ligature, and when the excised portion is small, and not materially changed in structure, little hæmorrhage is to be expected; but when its volume is greatly increased, and morbidly altered, the vessels will be increased in the same proportion, and may require to be tied. Hey met with two cases where from not having tied the bleeding vessels before the omentum was replaced in the abdomen, hæmorrhage occurred which nearly proved fatal.

Suppuration, although rather uncommon, sometimes takes place in the sac of an irreducible omental rupture. Le Dran mentions a case in which the pus entered the abdomen and proved fatal, and Dr. M. relates another, in which, however, the diseased state was more circumscribed and the result more fortunate.

Some of the older nosologists attempted to point out the prominent and distinctive symptoms of idiopathic inflammation of the omentum, so as to establish the means of distinguishing this disease from peritonitis or enteritis. Dr. M. thinks, however, that we shall seldom succeed in distinguishing the disease during life. It is only when the inflammation commences in an omental rupture, and extends to the abdominal portion of this membrane, that we can correctly ascertain its seat and existence.

Dr. M. states that he has frequently evacuated the fluid of ascites, by puncturing the sac of an old umbilical hernia, not only with safety, but with greater facility, and less inconvenience to the patient, than if the usual situation had been selected, and the practice is sanctioned by Sir A. Cooper.

An omental rupture is liable to be mistaken for a variety of diseases.

"When an intestinal hernia contains solid fæces, it presents some of the most prominent characters of an epiplocele. The history of the disease will, however, enable us to arrive at a correct conclusion.

"Hydrocele of the spermatic cord, varicocele, &c. have also some resemblance to an inguinal epiplocele. It has likewise been mistaken for a common hydrocele.

"Adipose tumours are sometimes attached to the sheath of the spermatic cord, immediately exterior to the inguinal ring; but more frequently, they are formed within the abdomen, in the cellular texture which connects the peritoneum to the neighbouring parts, and are protruded through the ring. They thus occupy the position, and possess all the external characters of an inguinal epiplocele; and often render a diagnosis impracticable.

"When small in size, they can be reduced with facility, and prevented from again escaping, by the application of a truss; but when large, or indurated, they continue irreducible, and it is in this state they are likely to engage the attention, and baffle the skill and tact of the surgeon. Pelletan relates, in his "Clinique Chirurgicale,"* several curious cases of such tumours.

"In nearly all the recorded cases, where the adipose tumour originated with

* Tome III. p. 33, &c. Paris, 1810.

the abdomen, the peritoneum was pushed before it, so as to form a sac analogous to a hernia. But, in the only case of this kind, which I have had an opportunity of examining, the tumour was found to have originated in the cellular texture exterior to the peritoneum, close to the outer edge of the internal inguinal ring, and to have descended along the cord, and formed, externally, a large pyriform tumour, without being invested by a peritoneal sac. This tumour, which was irreducible, was supposed to be an epiplocele, although not accompanied by any of the symptoms usually attendant on this disease. This opinion was confirmed by the existence, at the same place, of an intestinal hernia, which could be easily reduced, and retained within the abdomen.

"After death, which was occasioned by pneumonia, the peritoneum was found dragged through the inguinal canal, by the descent and weight of the tumour, so as to form a sac, into which the intestine passed. The appearance of the tumour, when exposed by dissection, and its texture, when divided, so closely resembled the adipo-fibrous degeneration to which the omentum is occasionally subject, as to render it impossible to distinguish between them.

"The nature of the disease was only correctly ascertained, by finding that the tumour was exterior to the hernial sac, and that the omentum was unconnected with the tumour, and occupying the upper part of the abdomen."

The succeeding article, entitled, "*Some considerations with respect to the blood, founded on one or two very simple experiments on that fluid*, by Benjamin G. Babington, M. D., is an extremely interesting one. The principal experiment to which Dr. B. alludes, is the following:

Experiment I.—"Let blood be drawn in a full stream from the vein of a person labouring under acute rheumatism, in a glass vessel which should be filled to the brim. By close inspection a colourless fluid will be immediately perceived around the edge of the surface, and after a rest of four or five minutes, a bluish appearance will be observed forming an upper layer on the blood, which is owing to the subsidence of the red particles to a certain distance below the surface, and the consequent existence of a clear liquor between the plane of the red particles and the eye. Let now a spoon previously moistened with water, be carefully immersed into the upper layer of liquid by a gentle depression of one border. The liquid may thus be collected quite free from red particles, and will be found to be an opalescent and somewhat viscid solution perfectly homogeneous in appearance. By repeating the immersion we may collect this fluid in quantity and transfer it to another vessel. That which I employed, is a bottle holding about 180 grains, of globular form, with a narrow neck and perforated glass stopper.

"The solution with which the globular bottle is filled though quite homogeneous at the time it is thus collected, is found after a time to separate into two parts, namely, a clot of fibrine which has the precise form of the bottle in which it was gathered, and a clear serum possessing all the usual characters of that fluid."

This experiment shows that buffed blood consists of only two constituents, the red particles and a liquid, which Dr. B. terms *Liquor Sanguinis*.

It was long ago observed that what is called inflamed blood, coagulates slower than healthy blood, and that the last portions of blood drawn from an animal bleeding to death, coagulated quickest. The following appears to be the immediate cause of a buffed crust.

"The blood consisting of liquor sanguinis and insoluble red particles, preserves its fluidity long enough to permit red particles, which are of greater specific gravity, to subside through it. At length the liquor sanguinis separates, by a general coagulation and contraction, into two parts, and this phe-

nomenon takes place uniformly throughout the liquor. That part of it through which the red particles had time to fall, furnishes a pure fibrine or buffed crust, while that portion into which the red particles had descended, furnishes the coloured clot. This in extreme cases may be very loose at the bottom, from the great number of red particles collected there, each of which has supplanted its bulk of fibrine, and consequently diminished its firmness in that part. There is, however, with this limitation, no more fibrine on one part of the blood than another."

The above account of the cause of the buffed surface on blood, affords us an explanation of the well known fact that this phenomenon is influenced by the shape of the vessel in which the blood is received. The space left by the gravitation of the red particles, bears a proportion to the whole perpendicular depth of the blood, so that in shallow vessels scarcely any buffed coat may appear, where the same blood in a deep vessel would have furnished such a coat of considerable thickness. Dr. B. moreover asserts that the quantity of crassamentum is also dependant, within certain limits, on the form of the vessel employed. If this be shallow, the crassamentum will be abundant, if approaching in form the cube or sphere, it will be scanty. This difference is owing to the greater or less distance of the coagulating particles of fibrine from a common centre, which causes a more or less powerful adhesion and contraction of these particles. Dr. B. is, we believe, the first to notice this fact, and there are perhaps few relating to the phenomena of venesection, of more practical importance; since blood is said to be thick or thin, rich or poor, in reference to the quantity of crassamentum it contains, and views of a disease are founded on these supposed conditions, which after all depend not on the blood itself, but on the vessel into which it is received.

To obviate the objection which may be urged against a general conclusion drawn from the experiment just alluded to, that it was made upon blood in a diseased state, Dr. B. received some healthy blood in a tall glass vessel half full of oil, which enabled its red particles to settle more quickly than would otherwise be the case. This blood was found to have a layer of liquor sanguinis, which formed a buffed coat, whilst a portion of the same blood received in a similar vessel, having no oil, had no inflammatory crust, as it is called. Hence it appears that healthy blood is similarly constituted as blood disposed to form a buffed crust, the only difference being that the former coagulates more quickly than the latter.

The first experiment also shows that the liquor sanguinis is an uniform homogeneous fluid, and no mere mixture of fibrine and serum, for as already observed, the clot formed by the liquor has the precise shape of the vessel in which it is received; hence the coagulation takes place uniformly from every part of the fluid, and the uniform density of the clot confirms this conclusion.

Dr. B. is also led to believe that fibrine and serum do not exist as such in circulating blood, but that the liquor sanguinis when removed from the circulation, and no longer under the influence of the laws of life, has then, and not till then, the property of separating into fibrine and serum. This separation which may be considered a death of the blood, may, under disease, take place within the body, but never, he thinks, consistently with healthy action.

It follows from these views that there is no such animal fluid as coagulable lymph.

"The liquor sanguinis," says Dr. B. "cannot with propriety be so considered, for it is essentially a fluid, and if under certain circumstances it separates into two parts, only one of these (fibrine) is coagulable, nor can I admit that this one part, considered by itself, previously existed in a fluid state, for in order to its fluidity it was necessary that the two constituents should be so united as to form one compound. There is, therefore, no better reason for affirming, that fibrine exists in a fluid state in liquor sanguinis, than for affirming that muriatic acid exists in a solid state in muriate of ammonia. The salt, indeed, is solid, of which muriatic acid forms one ingredient, but the ammonia is essential to the solidity of the compound. In like manner, the compound is fluid, of which fibrine forms one ingredient, but the serum is essential to its fluidity.

"Nor is it an unimportant error to suppose a fluid secreted from the blood which has the property of becoming converted into a solid, for we are thus led to overlook altogether the fluid portion of the compound with the albumen contained in it, which always forms by far the greater portion of the secretion."

The fact of circulating blood consisting of a homogeneous liquor and red particles, has led Dr. B. to the belief that when an effusion of serum takes place, we shall generally, in some neighbouring part, find a corresponding deposition of fibrine. Dr. B. does not believe that serum is a secretion intended for the lubrication of closed membranes, but says that such belief is a fallacy founded on appearances observed after death, which do not exist during life.

"When we recollect," says he, "how quickly the separation of liquor sanguinis into serum and fibrine takes place out of the body, we ought not to be surprised to find, though it be but a few minutes after death, or even before it, if dissolution be gradual, a serous effusion into cavities which, during health, could not be destined to contain any fluid.

"I doubt the fact, however, that such membranes have the power during health of secreting serum, by which term I mean a fluid essentially containing albumen; or that any thing more passes from them than an aqueous halitus, or vapour; and I therefore doubt the propriety of giving them the denomination of *serous* membranes. Under morbid defect of vitality they may and do suffer serum to exude from them containing more or less albumen, and in such cases we shall usually find effused into some neighbouring part the corresponding fibrine, which with the serum in question went to form the liquor sanguinis. Such membranes may pour forth the liquor sanguinis itself, in which case we shall find the separation to have taken place in the cavities which they line. Gelatinous masses will gravitate to their lowest parts, or flakes, or shreds of fibrine will be diffused through the fluid.

"Wherever this gelatinous formation exists, it is owing to the presence of fibrine, since, as is well known, albumen never assumes a gelatinous form, under the ordinary temperature. We may indeed with albumen, when mixed with water and heated, exactly imitate this appearance of fibrine, and form substances of all degrees of gelatinous consistence; but this only serves to confirm the belief that fibrine, in a diluted state, may put on a gelatinous appearance on coagulation. I have stated that closed membranes may pour forth serum or liquor sanguinis. They may also, under high excitement, pour forth blood itself. There is, therefore, no better reasons for calling such membranes serous, than for calling them fibrinous or sanguineous membranes. The secretion of each is morbid, and we ought not to designate parts from the morbid actions which may be set up in them."

The examination of fluids effused into closed cavities, throws much light upon this subject, and Dr. B. has offered several illustrations derived from that source. These are scarcely susceptible however of analysis, and our limits will not permit us to insert them entire.

Before closing our notice of this interesting paper, we must allude to the great resemblance between liquor sanguinis and chyle. The principal difference indeed existing between them is the red particles in the former, which it is evident are not derived from the latter, and that we must seek for their formation in some of the viscera connected with the circulation. The spleen has been looked upon as their secreting organ, and it may be interesting to state, that Dr. B. has examined with the most accurate and powerful microscopes the blood of a dog, whose spleen had been removed several months previously, and on comparing it with that of a healthy animal, it did not appear deficient in the quantity of its red particles.

The third article is *on the symptoms attending the change of a circumscribed popliteal aneurism into the diffused state*, with some particulars of an aneurism of the aorta which burst into the œsophagus. The author of this paper, Samuel Cooper, Esq. is of opinion that there are certain particulars relating to the change of an aneurism from the circumscribed into the diffused state, which require greater attention than they have yet received, and that without this attention the obscurity sometimes prevailing in the diagnosis will be the occasion of many errors in practice.

"It is not enough," he says, "to be informed, that when the aneurism becomes diffused, its pulsations are reduced, or stopped, and the limb painful, with an alteration in the shape of the swelling, coldness of the foot, and a sensation, experienced by the patient, of something having given way in the limb. Frequently, there is rather a complaint of numbness, than of pain; and if the aneurism be large, the compressed and altered state of the popliteal nerves, and the effect of distention on the branches of the cutaneous ones, will fully account for the general torpidness of the whole leg. With respect to a sudden change in the shape of the swelling, whether this symptom occur or not, will depend upon the situation of the opening formed in the sac, the extent and place of the extravasation, and the degree of œdema affecting the integuments. If the sac give way at a superficial point under the skin; the blood be effused in considerable quantity; and the limb be not already much enlarged from the œdematous state of the integuments; there will of course be a very manifest alteration in the shape of the swelling, and an evident and sudden extension, or increase of it. But, in the opposite conditions, that is to say, when the sac bursts at a very deeply seated point, when the blood is consequently injected into the cellular membrane between the muscles, and under the fascia; and when the integuments are already considerably thickened and swollen; a vast quantity of blood may be extravasated, without any remarkable change in the figure of the aneurismal tumour, or any very palpable increase in the tension and magnitude of the leg. As for the patient's having felt something break, or give way in the limb at the moment when the sac burst, it is a kind of information not constantly to be obtained, because the rupture is sometimes very limited at first, or may happen during sleep; and when the sensation is declared to have been experienced, little reliance can be placed upon the account, inasmuch as patients, with popliteal and other external aneurisms, frequently complain of cramp, and sudden attacks of extraordinary feelings in their limbs, without any change of the disease from the circumscribed into the diffused form.

"When the sac of an aneurism has burst in the foregoing manner, the propulsion of blood into it from the heart, can evidently no longer have the effect of producing a full and sudden distention of it, as more or less of that fluid will

either escape from it into the cellular membrane, or collect in one mass out of the original sac. Sometimes, however, when the breach in the sac is under a certain size, the pulsations do not completely stop at first; their strength is only reduced; and several days may elapse before there is a total cessation of them. Now, unless we suppose, that the opening in the sac enlarges after its first formation, and that the subsequent decline and stoppage of the throbbing of the tumour, can be explained on this principle, we must look into other circumstances for an elucidation of this interesting fact.

"In a case of the preceding description, several causes combine to render the pulsations weaker and weaker, and at length to extinguish them.

"1st. The more or less impeded state of the circulation, that takes place in the limb, as soon as a considerable quantity of blood has been injected into the cellular tissue. And, in order that the extravasation may attain the degree necessary for the full production of this effect, a certain time is obviously requisite; the limited size in the opening of the sac, and perhaps also sometimes the particular situation of it, away from the main current of blood, preventing the effusion from becoming all at once copious and extensive. By degrees, however, the quantity of blood in the cellular membrane increases; and then its pressure not only creates a great deal of irritation, but actually interferes with the regular supply of blood and nervous influence to the limb. Hence, the alarming fall of temperature in the foot, and the well known tendency to gangrene, consequent to the change of a circumscribed popliteal aneurism into a diffused one.

"2dly. Another cause, that has a powerful effect in gradually putting an end to the pulsations, is the increase in the quantity of coagulated blood and fibrine in the sac; the inevitable result of the stream of blood through it becoming more and more retarded, in proportion as the obstruction of the circulation in the leg is augmented."

Mr. Cooper illustrates these remarks by a very interesting case of popliteal aneurism, in which there was a rupture of the sac without any change in the shape of the tumour, diminution of its firmness, or material increase in the swelling of the leg; gangrene resulted, and amputation of the limb became necessary.

In popliteal aneurisms of considerable size, there is always peril in delaying the application of a ligature to the femoral artery; for although there may be no immediate danger of the skin giving way, and of the patient losing his life by hæmorrhage, the sac is apt to burst, and the disease to change from the circumscribed into the diffused state, with all the disadvantages and risk inseparable from the latter condition.

"By delay we suffer the muscles of the knee to become permanently injured in their organization; a prodigious sac to be formed, which will require a great length of time to be diminished and absorbed; the popliteal nerve to be converted into a thin expansion, not resembling its original structure; the popliteal vein to be obliterated; and the condyles of the femur and head of the tibia to be in part destroyed by the pressure of the disease."

The most remarkable points in the case of aneurism of the aorta, is that the basis of the scapula was displaced by the aneurismal tumour, and that the patient lived nearly eight weeks after a communication had been formed by ulceration between the aneurismal cavity and the œsophagus, and followed the laborious occupation of a wheelwright during a considerable part of this time.

In the ninth volume of the Society's transactions a case is recorded of axillary aneurism in which the subclavian artery was secured above the clavicle, by

the late Professor Post of New York, the first we believe of the kind in which the operation succeeded. In the thirteenth volume of the same work a similar case, in which that operation was successful, is related by Mr. Key, and in the volume now under notice, two cases are given in which the operation has been attended with equally fortunate results, one by Mr. Crossing of Devonport, the other by Mr. Mayo.

Mr. Crossing's patient was a stout, muscular man, forty-six years of age; the tumour was situated immediately under, and closely in contact with the right clavicle, extending to the cartilage of the fifth rib, stretching into the axilla, and over the point of the shoulder. It has a very tense, elastic feel, and the pulsation is generally rather obscure, but at other times is so distinct as to be seen at a considerable distance from the patient. The tumour is not compressible, but the pulsation can always be stopped by pressing on the artery above the clavicle. The arm from the shoulder to the extremities of the fingers is swollen to an enormous size; is benumbed, and has lost all power of motion. The pulsation at the wrist cannot be felt; and the arm is kept nearly at a right angle in consequence of the magnitude of the swelling in the axilla, the pectoral muscle and integuments covering it being stretched to the greatest extent. He is always in pain, and at times to a most agonizing degree; is unable to lie back in the bed, but is continually in a sitting position, with the arm supported on a pillow, and the body bent forward. His countenance is marked with great distress.

The operation was performed June 23d, 1850, in the following manner. The patient was seated in an arm chair, the head directed to the left side. The integuments over the clavicle being stretched upon the chest, Mr. C. commenced his incision near the sternal attachment of the mastoid muscle, and cut freely on the bone for about three inches and a half, thus dividing at once the integuments and platysma myoides. The parts being now allowed to retract, left the lower margin of the incision half an inch above, and running nearly parallel with the clavicle, and exposed the jugular vein to a considerable extent, which was easily drawn aside and kept out of the way with a blunt hook. The cervical fascia was next carefully divided from the clavicular edge of the sterno-cleido mastoideus to near the extremity of the wound, which brought into view the omo-hyoideus. This muscle instead of forming a triangular space, as it does in most instances with the scalenus anticus and clavicle, ran in a line with and just above that bone. Finding this rather unusual course of the omo-hyoideus an impediment, Mr. C. passed a director under and divided it. The knife was now laid aside, and the remaining part of the operation finished with the fingers and a common director. Some loose cellular membrane, and a large fatty gland being removed, the artery was found immediately below this substance, and three considerable branches of nerves passing over the vessel, and in close contact with it. These were separated, and the ligature passed under it, and tied in a double knot. One end of the ligature was cut off close to the artery, the other left hanging from the wound, the edges of which were now brought together, and secured with one suture and adhesive straps. Nothing very remarkable occurred during the progress of the cure—the ligature was retained until the eighty-fifth day. On the 28th of December following, the

man's health is stated to be perfectly good, the circulation free and perfect throughout the limb, and nothing left of the tumour but a little thickening in the sac of the aneurism, along the edge of the pectoral muscle. There remains, however, some want of strength and sensation in the limb.

The gland described as existing in this case immediately over that part of the artery which was tied, Mr. C. thinks would prove a better guide in this operation than the sealenus muscle. Mr. C. thinks that this gland will usually be met with; he says, that in not less than a dozen subjects whom he has examined, it was found precisely in the same situation.

The subject of Mr. Mayo's case was an athletic man aged forty-nine. The tumour was seated beneath the left clavicle, was four or five inches long and three in depth, and caused violent gnawing pains about the shoulder, breast, and back, from the irregular distention it occasioned of the axillary plexus of nerves. The operation was performed on the 26th of March, 1831, and is thus described:—

"Drawing down the skin of the neck, I made an incision about three inches and a half in length on the surface of the left clavicle, extending from the insertion of the sterno-cleido mastoideus muscle to the clavicular portion of the trapezius; by this the platysma myoides was exposed, which, as well as the subjacent fascia, I carefully divided, for upon the latter many branches of the external jugular vein were found, several of which I was obliged to divide in the progress of my dissection through the cellular substance, and secure them with ligatures. I traced the edge of the omo-hyoideus muscle, traversing the upper part of the wound, and directly below it I could place my finger on the artery as it passed over the first rib, which seemed to be about an inch and a half or two inches from the surface; to this point I directed all my attention, and endeavoured to clear my way to the artery by cautious touches with the edge of the scalpel, and by tearing the cellular substance with its handle, and with a director, till at length I was able to get my nail upon the rib and then under the artery, so that after various efforts I passed a common blunt aneurismal needle under it, armed with a strong round ligature, and having ascertained that nothing else but the artery was included in the ligature, I tied it with a double knot, drawing each knot tight with the iron rings invented by the late Mr. Ramsden. The subclavian vein appeared just within and below the superior border of the clavicle, but formed no impediment to the operation; the branches of the external jugular, however, were very annoying, and kept the wound continually filled with blood, and the apprehension of wounding larger branches limited the extent of the internal wound to two inches at most. He bore the operation with great courage, though with some impatience, as it occupied rather more than twenty minutes; the pulsation ceased, and the pains in the shoulder were much relieved.

The ligature came away on the eighteenth day, and on the 2d of May the wound had completely cicatrized, the tumour had quite disappeared, and the arm was recovering its strength, but the pulse was not to be felt at the wrist.

Dr. John Veten, in a brief communication, extols the effects of tobacco as a local application in gout and other cases of constitutional inflammation. Dr. V. says that this article is capable of alleviating in a great degree, and sometimes altogether arresting various forms of specific inflammation, particularly rheumatism and gout, and that in this last disease it also assists the parts most materially in recovering their tone and strength. He adds that it is also a valuable applica-

tion in all cases of erysipelatous inflammation, and that the only precaution to be attended to, is not to apply it to any part contiguous to the stomach, unless the production of nausea be at the same time desirable. He equally recommends it in acute migratory inflammation, attacking the testicle or sclerotic coat of the eye. Dr. V. employs the infusion made according to the London Pharmacopœia, and in many cases he says it will be well to rub the part with eau de cologne, after the use of the tobacco.

The history of a case, in which, on examination after death, the pancreas was found in a state of active inflammation, by William Lawrence, Esq. constitutes the seventh article. This case is interesting, both from the circumstance of morbid changes in the structure of the pancreas being extremely rare, and also because it connects the symptoms and progress of the affection with the morbid changes which were produced.

The subject of this case was a lady, twenty-one years of age, who, about the fifth or sixth month of her pregnancy, lost her usual healthy appearance, and gradually became pallid, but without feeling unwell. About a month previous to her confinement, she had a severe attack of catarrh, with very little fever, and which yielded to the usual remedies. The morning on which her labour commenced, (the 29th of January,) she looked and felt extremely exhausted. The presentation was natural, the pains returning at pretty regular intervals, and she was delivered of a healthy child. The placenta was expelled by the contraction of the uterus five minutes afterwards, and she did not, during the whole labour, lose two ounces of blood. The night after her labour was passed without pain; she was tolerably tranquil, but got little sleep. It was evident on the third day after her delivery, that although the labour was comparatively easy, she had suffered much from the exertion. She felt so exhausted that she was constantly calling for sal volatile to smell, and occasionally to take internally, in order to prevent fainting: she sighed deeply and frequently. The least attempt to raise her head from the pillow produced a violent beating in the temples, but it subsided after a few minutes of perfect quietude. Her pulse was feeble and irritable, at about eighty-six beats in a minute. The bowels were rather relaxed.

Her state and symptoms were like those of persons who have lost large quantities of blood; and her medical attendant considered that there was a defect in the process of sanguification. Under this view of the case, which was adopted by a physician who saw her soon after her confinement, cordials and stimuli, both medical and dietetic, were resorted to. No advantage resulted from this plan, and another physician was called in, who recommended calomel and opium, on the idea that inflammation had taken place in the chest, and that effusion had probably been the consequence. Mr. L. saw her about thirty-six hours before death, when no hope of recovery could be entertained. She was excessively pale, with a rapid, feeble pulse, hurried breathing, some fulness and uneasiness on the right side of the abdomen.

Mr. L. says that he afterwards learned that this lady had been most singularly troubled by thirst during her pregnancy, and that her mother, alarmed by her drinking cold fluids in large quantity, had represented to her that she feared

the circumstance might prove injurious to the child. She had also suffered much from pain in the epigastric region, which was sometimes so severe as to oblige her to retire to her own apartment. In mentioning this circumstance, her mother drew her hand across the abdomen in the seat of her daughter's sufferings, and she pointed exactly to the situation of the pancreas.

She however declared to her physicians, who attended during and after her confinement, and who examined her abdomen several times to discover if there was tenderness there, that she felt neither pain nor soreness on pressure.

Examination thirteen hours after death.—"The body had not lost its heat; the internal parts were warm to the touch. The skin was universally and extremely pale. No blood escaped on making the incisions necessary for exposing the abdomen and thorax and for sawing round the skull.

"The membranes lining the abdomen and thorax, and the viscera contained in those cavities, excepting the pancreas and spleen, were extremely pale and almost bloodless. The appearance was like that observed in persons who have died of hæmorrhage, or under the state described by the term anemia. The liver and kidneys were pale, and the several portions of the alimentary canal quite white, without any traces of blood in them.

"The heart was pale and rather large; its cavities and the contiguous large vessels contained some fluid of watery consistence, about the colour of red wine, and small portions of soft coagula. The coronary vessels contained no blood. The muscular substance of the heart was pale and rather flaccid: the structure of the organ in other respects was natural. The lungs were healthy, except that frothy fluid escaped on cutting into their posterior part. The cellular texture around the pancreas and duodenum, the great and small omentum, the root of the mesentery, the mesocolon and the appendices epiploïcæ of the arch of the colon were loaded with serous effusion. The fluid, which was transparent, bright yellow, and of watery consistence, ran out in large quantity on cutting into the parts above mentioned, which were distended in some places to the thickness of two or three inches.

"The pancreas was throughout of a deep and dull red colour, which contrasted very remarkably with the bloodless condition of other parts. It was firm to the feel externally; and when an incision was made into it, the divided lobules felt particularly firm and crisp. The texture was otherwise healthy. The part was left wrapped up in a cloth for nearly forty-eight hours after its removal from the body, the weather being then very cold. At the end of this time the hardness was gone, and the gland even appeared rather soft.

"The spleen was rather large and turgid, livid externally, brownish-red internally, and somewhat soft in texture.

"The surface of the dura mater, covering the cerebral hemispheres, was lined in the neighbourhood of the falx, with a very thin, soft, and almost mucilaginous layer of light red tint; it could be scraped off with the handle of the knife, leaving the membrane of its natural appearance. There was slight serous infiltration of the pia mater. The blood-vessels of the brain were moderately full. The distention of the cellular membrane by serous effusion in this instance was analogous to the œdematous swelling which often occurs round other parts when actively inflamed.

"The pancreas is not unfrequently found after death, as it was in this case, preternaturally hard; and I suppose that the gland has been in this state in the numerous instances, in which we hear and read of its having been scirrhous. Although I do not know on what this hardness depends, I have never considered it as a morbid condition; because it occurs in individuals who have died of other diseases, without any symptoms referable to the pancreas; because the structure of the part is perfectly healthy in all other respects, and because the hardness soon disappears after death, as it did on this occasion."

The volume concludes with some pathological and practical researches on uterine inflammation in puerperal women, by Robert Lee, M. D. We shall make this the subject of a special article in a future volume.

XVII. *A Treatise on Indigestion, with Observations on some painful complaints originating in Indigestion, as Tic Douloureux, Nervous Disorder, &c.* By Thomas J. Graham, of the University of Glasgow, and of the Royal College of Surgeons, London, &c. First American, from the last London edition, revised and enlarged, with *Notes and an Appendix, containing Observations relative to the Modes of treating Dyspepsia*, lately adopted and recommended by Dr. Ayerr, Mr. Halstead, and others. By an American Physician. Philadelphia, Key & Mielke. Oct. pp. 206.

The fruitful topic furnished by dyspeptic ailments, has, we think, been very judiciously treated in this volume of Dr. Graham's. The author's attention is not only directed to the best curative means, but to the exposition of the erroneous views that have been heretofore too generally inculcated in regard to certain affections often complicated with indigestion. He dwells particularly upon the two most prominent errors of the day, namely, the mistaking severe disorders of the stomach and intestinal canal, for disease of the liver, and the employment of large doses of mercurials for the cure of supposed liver complaints. He wishes to be understood as not inveighing against the proper use, but only against the *abuse* of mercurials, this last being an evil of magnitude in British practice, and we think there is reason to believe, of still greater extent in that of America.

Dr. Graham maintains that the maladies generally denominated "*liver and bilious complaints,*" proceeding from a supposed disordered condition of the liver, are not in any degree so frequent or so formidable as disorders of the alimentary canal. This he thinks sufficiently demonstrated by enlightened anatomists whose numerous and close dissections were not instituted for the purpose of serving any particular views or doctrines. The investigations of Louis, Broussais, Andral, Abernethy, Howship, Marshall Hall, &c. are adduced in support of the correctness of his opinions. Whilst upon the subject of the fallacious character of the symptoms ordinarily reckoned the certain indications of disease in the liver, he gives us the following account of a late eminent British practitioner.

"The late Dr. James Curry, (de mortuis nil nisi verum,) whose book on biliary concretions, together with his mode of practice, operated greatly in making diseased liver, and its supposed remedy, calomel, so very fashionable and fatal, was so wedded to his notions on this subject, that in his patients, *invariably*, the liver was considered the real source of all their ailments; and if, when labouring under stomachic irritation and disorder, they complained of pain in the left side, in the region of the stomach, he would endeavour to persuade them they were mistaken, and that it certainly was in the right! If he could not bring them over to this belief, it was his custom to say, 'Ah, I shall bring it there then!'"

He subsequently informs us in another part of his treatise, that the same Dr. Curry was in the habit of putting his hand to his right side, and saying, he was assured there was a very small portion of liver left there.